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THE MANHOOD TRIBUTE TO THE MODERN MACHINE: INFLUENCES DETERMINING THE LENGTH OF THE TRADE LIFE AMONG MACHINISTS.

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Some years ago an article appeared in a medical journal in which the writer stoutly denounced the audacity of the laity for daring to enter the realms sacred to science before they—the laity—were properly prepared and equipped. No layman, until he was thoroughly qualified by properly tabulated and classified data had a right to penetrate the chamber behind the sacred veil, or to express an opinion therein. I was heartily in accord with the writer then, nor have I changed my opinion, but circumstances may arise which may cause a modification in any opinion, no matter how strong the foundations upon which the opinion may have been built. Circumstances have arisen at this time in my case in which I find myself placed in the predicament of having to deal with a subject in a scientific manner without having any recognized material—that is, scientifically recognized material—from which to draw either inspiration or deduction.

The purpose of this paper is to prove that with the introduction of modern high-speed machinery the life of the operator of such machinery has been shortened. To prove this I have made diligent search in the promising sources for exact information bearing upon the subject, but without success. One or two works were found relating to the hygienic conditions of the factory and the effect these conditions had upon the life of the worker, others relating to accidents through machinery, but nothing was found showing that as the speed of the machine was increased the life of the worker was decreased in about the same ratio. As neither factory conditions from a hygienic standpoint nor the safeguarding of machinery had any immediate or direct bearing upon the

subject, the works referred to lent neither aid nor comfort. This being so, I am forced to fall back upon certain conclusions I have reached during my nearly two score years' connection with the machine shop. For a quarter of a century I have observed factory conditions, and if the conclusions I have reached were not approached by a scientifically trod roadbed and in a scientific manner, they have been reached at least by practical experience and close observation. This may not be as exact as true science must be, but it is from such experience and observation when properly classified that the exact data of science are secured.

Great changes have been made in the last quarter of a century, and every industry has been affected with the advent of the machine, but in no other sphere of human activity has such a change been effected as has occurred in the machine shop. The one who would realize this most readily would be the expert machinist of twenty-five years ago, who, proficient in every branch of his trade, took it into his head to cease work for two decades. Upon making his appearance in the machine shop again he would be surprised to find his occupation gone. He would find the change complete, a revolution had taken place during his absence, old methods had given place to new, the hand tool had been superseded, and that he was in a new world of which he does not form a part. This new world has been *created* upon the exact spot where he once reigned supreme, but the whole aspect is changed. Both men and machinery are different; different in type and product. Old men have disappeared and boys have taken their places. Speeds have been increased, tools have been made to cut deeper, and everything seems to be run at fever heat. Truly a mighty change has taken place since he last laid down his tools. Let us look through his eyes and observe with great care what has really happened, and we shall reach conclusions from which deductions can be made which in turn will convince us that the speeding up of machinery has not been *conducive* to the *longevity* of the worker.

First of all old men have disappeared, and for this there must be a good and sufficient reason. What is the reason? Has speeding up of machinery anything to do with it? Has the life of the old time machinist or his working life been curtailed?

Time was when age was honored in the machine shop; when the worker who had reached the prime of manhood was both re-

spected and appreciated, because the added skill he had gained with his maturing years had won him the respect of his shopmates, while this same skill, adding to the profits, brought appreciation from his employers. The speeding up of the machine has changed all this, for even had he kept up with the times his added years prevent him from keeping pace with the machine; its gait is too rapid, so he is forced aside to make room for a younger man. Not being able to keep the pace he is no longer profitable, and his presence is, therefore, undesirable in or about the factory. The first sign of age is the signal for his dismissal, and being dismissed from one shop it is difficult, if not almost impossible, to get a job elsewhere, so long as these signs are visible. To prolong his struggles for existence within the craft boundaries of his earlier years he tries device and disguise to deceive the employer as to his age, until he is forced to seek a living elsewhere, a mere derelict on the industrial sea.

Druggists doing business in the more densely populated districts of any of our industrial centers will tell you that the demand for hair dye and articles of a similar nature has greatly increased in recent years, while the number of workmen you meet who have not yet reached middle age, with dry, parched, unnatural looking hair, nondescript in color, tells that these articles when bought were intended for practical purposes. But age will tell, and despite the deceptive appearance which the hair dye lends, the man who cannot be speeded up, who cannot keep the pace, who cannot keep up the gait, must fall by the wayside with all other things that have outlived their usefulness. His life has been curtailed—indirectly, it is true—but still curtailed, shortened by the modern high-speed machine.

So much for the old men who have disappeared from the machine shop; but what of the young men who have taken their places? How do they fare; how do they bear this new form of life burden? Pathology has not yet explored the modern machine shop, nor even crossed the threshold; when it does, however, its labors will more than be repaid with the materials it will find suitable for investigation. Students of sociology—that most complex of all scientific studies—will find in the modern machine shop a new field of observation, a new base from which to follow their lines of research, for the influence of the high-speed machine goes beyond the factory walls and extends beyond the confines of to-day. It enters domestic and social life, and will affect the generations yet to come.

The youth fresh from school, bright, strong, and healthy, alert and active in mind and in body, enters the machine shop, elated and hopeful, ambitious to conquer this world of levers and whirling wheels, but only to leave it sooner or later a conquered being. The great strain, both mental and physical, soon proves too much for him, and he becomes a nervous, shattered wreck; that is, unless certain precautions are taken and conditions are favorable, and there are means within reach of enabling him to take advantage of these conditions. If his period of service in the machine shop is broken by intervals of rest and recreation, nervous breakdown is averted, but where there is no break in the strain or loosening up of the tension, collapse is inevitable. Great care and watchfulness to guard against the effects of the nervous strain are necessary when the youth begins his career in the machine shop, for skill, exact skill, cannot be acquired without it. And when proficiency has been reached, although the young machinist does not notice it, he is still bearing the strain upon his nerves. It is this overexertion kept up at high tension, day in and day out, year after year, that is shortening the life of the machine-shop worker and robbing him of longevity. It is unfortunate that the great majority of workers in the machine shop, when the first signs, the languor and lassitude of nervous breakdown appear, are in no position to sojourn for a brief space by the seashore or in the mountains to recuperate and avert disaster. It is not within their means. They consult a medical man, or read cunningly worded advertising matter and testimonials by which they are attracted and allured into the purchase and trial of some nostrum with a high-sounding name, claiming to be a tonic for just such cases of foreshadowed nervous prostration. The sequel is disaster.

In searching for something to brace up his nerves the worker has no idea he is taking great risks, or running any danger of becoming a victim to the drug habit. Unfortunately, it often happens that he strikes something which, for the time, seems to renew the health and vigor of the years gone by, but the relief is only temporary. He must repeat and increase the dose, and before he knows it—he perhaps never realizes it—he becomes the slave of some derivative of coal tar, alkaloid or alcohol. I do not wish it to be understood that the high-speed machine of the modern machine shop is responsible for all the victims of the drug habit, but the number of

hesitating, shrinking young men one meets among the workers with leaden eyes, lacking in luster and expression, weak lipped and down-drawn mouth, flaccid flesh and unelastic skin, would indicate that drugs are responsible for many of the cases.

The high-speed machine has been too recently introduced to observe final results, but what has been noticed and briefly pointed out in this paper will go far to indicate an eventual terrible shortening of life's span. When once the nervous system is weakened or shattered, the end is not far distant; yet, notwithstanding all this, even should it be conclusively proven that the machine is responsible for the havoc just outlined, no attempt must be made to reduce its speed by a single revolution, or limit its output by a single piece. The remedy does not lie in that direction.

Trade unionism points out how prevention is better than cure. Lessen the number of hours the worker is forced to work at high speed, concert pitch, and his nerves will remain normal, and he will live to the full—his promised three score years and ten.